Attenuation Structure of P Wave in the Aftershock Area of the 2005 West-off Fukuoka Prefecture Earthquake (M7.0)

\# Satoshi Matsumoto[1]; Kenji Uehira[1]; Atsushi Watanabe[2]; Kazuhiko Goto[3]; Yoshihisa Iio[4]; Naoshi Hirata[2]; Tomomi Okada[5]; Hiroaki Takahashi[6]; Hiroshi Shimizu[1]; Masanao Shinohara[2]; Toshihiko Kanazawa[7]

[1] SEVO, Kyushu Univ.; [2] ERI, Univ. Tokyo; [3] Nansei-toko Obs.for Earthquakes and Volcanoes, Kagoshima Univ; [4] DPRI, Kyoto Univ.; [5] RCPEV, Graduate School of Sci., Tohoku Univ.; [6] ISV, Hokkaido Univ; [7] ERI, Tokyo Univ

We have developed a method of estimating seismic attenuation (1/Q) in a seismic active region such as aftershock area. To estimate attenuation factor between the adjacent two hypocenters, we employed two seismograms taken at a station, and calculated a ratio between two power spectra of direct waves normalized by those in coda for the two events. The coda normalization for the spectrum and the ratio between two events minimized possible effects of source, site, instruments, and attenuation from station to the hypocentral area. 1/Q value could be estimated from variation of collected ratios of event pairs in many stations at different travel time difference. We applied this method to the aftershock area of the 2005 West-off Fukuoka Prefecture Earthquake (M7.0). Using the spectra of seismograms of 1780 events recorded by the dense seismic network deployed around the aftershock area, we obtained spatial variation of 1/Q value in the area. The 1/Q distribution thus obtained suggests that there is a high attenuation area around the edge of the main shock fault.